

Saturday Magazine.

N^o. 373.

APRIL



28TH, 1838.

PRICE
ONE PENNY.

THE ALBIGENSES. No. V.



THE CASTLE OF CRUSSOL, IN THE SOUTH OF FRANCE.

CRUSADE AGAINST THE ALBIGENSES UNDER SIMON DE MONTFORT—CRUELTIES PRACTISED UPON THE INHABITANTS OF THE CAPTURED CASTLES—SIEGE OF LAVAUR.

THE Castle of Crussol, situated in the ancient district of Vivarais, and in that part of it which forms the modern department of Ardèche, is one of the most picturesque of those ruined strong-holds so numerous in the south of France, and so interesting in the eyes of a Protestant, from their connexion with the memorable crusade carried on against the Albigenses, by the Church of Rome and its adherents, in the early part of the thirteenth century. It stands upon a lofty eminence of rock, not far from the right bank of the river Rhone, and nearly opposite to the town of Valence, upon the left bank.

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It stands, (says Mr. Hughes,) on a conical cliff on the opposite side of the river, overlooking the town at about two cannon-shots' distance. On inquiring into the history of this eagle's-nest, we found that it had been, in days of yore, the fastness of a petty free-booting chief, who kept the inhabitants of Valence in a perpetual state of war and annoyance; a history which almost appears fabricated to suit its appearance and character. Seeing it relieved by a gleam of sunshine from a dark evening cloud behind it, we could fancy, without any great effort of imagination, that, like the bed-ridden Giant Pope in honest John Bunyan, it was grinning a ghastly smile of envy at the prosperity which it could no longer interrupt.

In a former paper* we brought down the history of the crusade against the Albigenses to the capture of the castle of Minerve, by Simon de Montfort, in the month of July, 1210, when that ambitious per-

* See Saturday Magazine, Vol. XII., p. 89.

secuting chieftain and his fanatical followers, compelled one hundred and forty persons, men and women, to leap into the flames, which they had kindled in the square of the castle. Immediately after, De Montfort proceeded to the siege of the castle of Termes, an extremely strong fortress upon the frontiers of Roussillon.

The capture of Minerve and Termes, two of the strongest places in Languedoc, produced a very disheartening effect upon the garrisons of other castles, who feared to put any trust in the strength of their walls against the overwhelming force of the crusaders. As De Montfort advanced from Termes to the northward, he found a large number of their fortresses deserted; the inhabitants had abandoned them in despair, and betaken themselves for security to the woods and mountains. But their flight did not save them from the unrelenting ferocity of their enemies; they were pursued into their retreats, where the greater part of them were put to the sword, the rest being taken captive to the camp, and burned for the edification of the army.

The prospect of a great addition to the army of crusaders in the ensuing campaign of 1211, inspired their leader with fresh confidence and boldness. The fervid zeal of the monks, loath to slumber in the cause of persecution, had never ceased to inflame the passions of the credulous vulgar; and the success which had attended their recent preachings, gave promise of a larger crowd of fanatical pilgrims than had visited the country of the Albigenses in either of the preceding years. De Montfort felt that it was no longer necessary for him to keep any measures, or, in the phrase of Pope Innocent, "to employ guile" with regard to the Count of Toulouse; and he prepared, therefore, to commence open hostilities against him. He was prompted to this step by a desire of gratifying not only his own ambition in adding the fine sovereignty of Count Raymond to his former acquisitions, but likewise the hatred which the abbot Arnold, and Fouquet, the persecuting bishop of Toulouse, had contracted for that unfortunate prince.

In the month of March, Simon de Montfort, finding himself at the head of a very large army, proceeded to open the campaign, and directed his first effort against the castle of Cabaret. This stronghold had hitherto successfully resisted the arms of the crusaders; but it appears that the continual reverses of the Albigenses during the two years of the war, had broken their spirit and deprived them of the hope of effectually contending with the overwhelming force which avarice and fanaticism had arrayed against them. For Peter Roger, the lord of Cabaret, opened his gates on the approach of De Montfort, and tendered his voluntary submission; and his example was followed by the chiefs of many other castles situated in the mountains, which separate the dioceses of Carcassonne and Toulouse. All these places on surrendering were treated with humanity; De Montfort rarely exercised this virtue, and this departure from his general practice is accounted for by his desire of obviating the delay which would have been occasioned to his progress, if he had driven their defenders to a desperate resistance, by showing them that they would be no better treated if they surrendered.

Lavaur, situated on the Agout at the distance of five miles from Toulouse, became now the object of attack. This place, which afterwards rose to be an episcopal city, was then only a strong castle, belonging to a widow named Guirande, whom her brother, Aimery de Montreal, had joined with eighty knights, after having been deprived of his own possessions by

the crusaders. Both the noble lady and her brother professed the doctrines of the Albigenses; and they had opened an asylum within the walls of the castle, for those who were persecuted in other parts of the province. Lavaur was thus regarded by the crusaders as one of the principal seats of heresy; and as the fortress was surrounded by strong walls and protected by deep ditches, besides being well stored with provisions, its capture was deemed an object of great importance.

While the crusaders were undertaking the siege of Lavaur, Fouquet, the fanatical bishop of Toulouse, repaired to that city and displayed his zeal in the cause of persecution by gathering a band of auxiliaries. He told the inhabitants that the presence of a number of Albigenses in that city had rendered them an object of horror to all Christians; and that to purify themselves from the stigma of being confounded with those heretics, they should exhibit an exceeding zeal in arming themselves against those of their fellow-citizens who had departed from the Catholic Church. He succeeded in enrolling a large number of them in a society which styled itself the "White Company," and in token of the purity of its faith engaged to destroy the heretics by fire and sword. Five thousand of this body of fanatics he despatched to aid in the siege of Lavaur.

This siege was prosecuted by the crusaders with vigour. Their chieftain possessed a large share of military skill; and his experience had made him conversant with all the resources of the art of war in that age. He himself had served in the Holy Land; and he had in his camp many knights who had fought against the Mohammedans and against the Greeks, and in their eastern campaigns had acquired a knowledge of the attack and defence of fortified places. He was therefore able to employ against the walls of Lavaur ingenious machines, which had been but recently introduced among the nations of the west, and were as yet quite unknown to the inhabitants of the country bordering upon the Pyrenees. The most fearful of these was that called the "cat." It was a very strong movable wooden tower, which being built out of the reach of the besieged, was entirely covered with sheep's-skins, with the fur outwards to guard it from fire, and then being provided with soldiers at its openings, and on the platform at its summit, was moved on rollers to the foot of the wall. Its side then opened, and an immense beam, armed with iron hooks, projected like the paw of a cat, shook the wall by reiterated strokes, after the manner of the ancient battering ram, and tore out, and pulled down, the stones which it had loosened.

De Montfort succeeded in constructing a "cat," but the wide ditches of Lavaur prevented him from bringing it near enough to the walls. The crusaders, under the order of De Montfort, laboured unceasingly to fill up the ditch, whilst the inhabitants of Lavaur, who could descend into it by subterraneous passages, cleared away in the night time all that had been thrown in during the day. At last Montfort succeeded in filling the mines with flame and smoke, and thereby prevented the inhabitants from passing into them. The ditches were then speedily filled, and the cat was pushed to the foot of the wall; and its terrible paw began to open and enlarge the breach.

On the third of May, 1211, De Montfort judged the breach to be practicable, and the crusaders prepared for the assault.

The bishops, the abbot of Courdieu, who exercised the functions of vice-legate, and all the priests clothed in their pontifical habits, giving themselves up to the joy of seeing the carnage begin sang the hymn *Veni Creator*. The

knights mounted the breach; resistance was impossible, and the only care of Simon de Montfort was to prevent the crusaders from instantly falling upon the inhabitants, and to beseech them rather to make prisoners, that the priests of the living God might not be deprived of their promised joys. "Very soon," continues the monk of Vaux-Cernay, "they dragged out of the castle, Aimery Lord of Montreal, and other knights, to the number of eighty, whom the noble earl immediately ordered to be hanged upon the gallows; but as soon as Aimery, the stoutest among them, was hanged, the gallows fell; for, in their great haste, they had not well fixed it in the earth. The earl seeing this would produce great delay, ordered the rest to be massacred; and the pilgrims, receiving the order with the greatest avidity, very soon massacred them all upon the spot. The lady of the castle, who was sister of Aimery, and an execrable heretic, was by the count's order thrown into a pit, which was filled up with stones; afterwards our pilgrims collected the innumerable heretics that the castle contained, and burned them alive with very great joy."

The expression of "very great joy" used by the writer whom Sismondi here quotes, is the phrase which he always employs upon a similar occasion. The writer is Peter de Vaux Cernay, a monk of Citeaux, who followed his lord Simon de Montfort to the crusade, and was doubtless an eye-witness of the enormities which he relates, and in the relation of which he seems to take as much delight as he ascribes to the actors in the perpetration of them.

ON ARTIFICIAL PEARLS.

AMONG those decorations, which have at all times obtained a large share of admiration, may be reckoned Pearls. The delicate hue of these little globules has made them a very favourite ornament in nearly every part of the earth, especially in the East, where personal decoration is carried to a much greater extent than in most European nations. It is evident, from different allusions in the Old Testament, that Pearls were looked upon, several centuries before the Christian era, as the same costly and precious gems that they are in the present day. We will instance one from the Book of Job, chap. xxviii. v. 17; speaking of wisdom, Job says, "The gold and the crystal cannot equal it: and the exchange of it shall not be for jewels of fine gold. No mention shall be made of coral, or of pearls: for the price of wisdom is above rubies." The readers of Roman history are familiar with the story of Cleopatra, Queen of Egypt, who, as it is said, dissolved in vinegar a pearl, valued at 50,000*l.*, and drank it off. This silly exhibition of extravagance sufficiently shows what an enormous value was placed upon Pearls in those days; and we can scarcely wonder that attempts should have been made, at a very early period, to produce something that should present a similarity to Pearls.

We have already given a description of the Pearl Fishery in Ceylon*, so that we need not describe, at any length in this place, the mode of procuring natural Pearls, except so far as we have anything new to say upon the subject. Some of our readers, then, are probably aware, that Pearls are extracted from the shells of a large species of oyster, (about three times the size of common oysters,) which grow in the shallow seas about Ceylon, Sumatra, Japan, the Persian Gulf, and other places on the shores of Asia. These oysters are brought from the bed of the sea, several feet below the surface, by divers, who follow that perilous avocation as a means of living, and are able to remain under water for several minutes at a time.

The best Pearls are found imbedded in the soft pulpy substance of the oyster itself, but others, of an

* See Saturday Magazine, Vol. II., p. 5 and Vol. VI., p. 178.

inferior quality, are often found imbedded in the shell, from which great care is required to extract them. Respecting the origin of Pearls great diversity of opinion has prevailed, but the most probable conjecture is that of Raumur, a French writer, who, about 120 years ago, paid much attention to this subject. He considered Pearls to be the result of disease, in the same way as stone in the human bladder is known to be; that they were originally fluid, forming part of the vital system of the animal, but that having burst the vessel or membrane which contained them, they hardened into a little round solid, which became the Pearl. This opinion is supported by a statement which has been made, that if these oysters be pricked while alive, a fluid will be discharged, which on hardening very much resembles a Pearl; and it is further supported by two other circumstances, which we shall presently notice.

The love of gain is such a ruling passion, that when men find there is either a large demand for an article, or a high price paid for it, they seldom fail to devise some means by which the supply shall be rendered more abundant. Accordingly many attempts were made to render the oysters more prolific of Pearls. These schemes appear to have been of three kinds. *First*, to prick the oyster; *second*, to perforate the shell; and, *third*, to introduce five or six small beads within the shell. The mode in which these processes acted was as follows.

First.—The Indians, after catching the oysters and opening the shells, pierced the oysters with a sharp instrument, when a few drops of glutinous liquid oozed out, which they received in little iron moulds, formed into a globular shape. When the globule had hardened, it assumed all the appearance of a Pearl. This description, which is met with in but one or two ancient authors, is not considered to be of sufficient authority, as nothing of the kind is known at the present day.

Second.—When the shell of the oyster is perforated with a small hole, the little inhabitant, to exclude unwelcome intruders, fills or stops the inner edge of the hole with a glutinous matter, which hardens into Pearl, not equal to the natural Pearls, but still possessing some value. This statement rests on better authority than the former, for Linnaeus, the great botanist, announced that he had produced the same phenomena with mussels. It is necessary to remark here, that Pearls have been found in mussels off the coast of France, and that in the museum of the late Sir Joseph Banks, a mussel-shell was deposited, in which a small fragment of iron was found sticking, round which a pearl-like substance had collected. It was supposed that the iron was part of a sharp instrument, broken off in the act of piercing the shell.

Third.—The Chinese have a mode of enticing the oysters to the surface of the water, and inducing them to open their shell, (rather more successful it would appear than the mode of catching birds by putting a little salt on their tails,) the artful fishermen then drop into the cavity of the shell a string of five or six small beads, made of mother-of-pearl, and then allow the oysters to escape. This takes place in the Spring of the year and in Autumn, when the Pearl Fisheries occur, the oysters are found to be encrusted with a sort of enamel, which gives them a close resemblance to Pearls. This deception is believed to be carried on at the present day in the Indian Seas.

It may be as well here to state, that mother-of-pearl is the interior surface, or scale, of the shell of another species of oyster, existing in the same seas; indeed

it is often seen in the shell of the common oyster, and being therefore much more plentiful than Pearls, can be substituted for them in the above piece of trickery at a small expence.

All of these schemes, however, are productive of pain to the poor little inmates, and we cannot but condemn them as cruel modes of providing decorations for the persons of our fair countrywomen. It is, however, less objectionable than a method practised by the ladies of South America, who cover portions of their dresses with living diamonds, which the light emitted by the fire-flies of the country affords. The poor insects are attached by means of pins.

We now propose to show, that very accurate facsimiles of Pearls may be produced, although still, we regret to add, at an immense sacrifice of animal life; but we may previously remark, that attempts have been made to melt or soften small or broken Pearls into one larger one. A large Pearl is worth a great deal more than two Pearls of half the size, and this has induced many to try that transformation. Accounts have been given of a mode of softening the small Pearls, by steeping them in a mixture of strong vinegar and Venice turpentine; but it does not appear that the success was such as to induce a continuance in that plan.

In the sixteenth century glass-beads were constructed at Venice, and coated with a kind of pearl-coloured varnish, which gave them a rough resemblance to Pearls; but the result seemed to show that the resemblance was not very good, for they were shortly afterwards superseded by little balls of wax, covered with a pearl-like enamel; but, unfortunately, the enamel was not capable of resisting moisture, and it soon became eaten into small holes, so that these artificial Pearls required frequent enamelling.

We are not aware that any further improvement took place in these attempts to imitate nature, until about the year 1656, when M. Jaquin, a bead-maker in Burgundy, happening to look into a vessel in which some small fish (the *Cyprinus alburnus*, called in England the *blay* or *bleak* fish,) had been kept, he perceived a pearl-like powder, which had evidently come from the scales of the fish, and, by following this process, he obtained the powder at pleasure. He put a number of the scales into a small quantity of water and washed them well, then poured away the water, and repeated the process with clear water several times in succession, until nothing further could be washed from the scales. The water was then put by; a sediment fell to the bottom; and on pouring the water from the sediment, the latter appeared as a thick creamy liquid, having that delicate silvery appearance which distinguishes pearls. It instantly occurred to him, that the discovery might be made a source of profit to himself. He therefore constructed small beads of plaster of Paris, and coated them with this new substance mixed with isinglass. The close resemblance to pearls was immediately acknowledged, and a great demand for them quickly arose. But the heat of the fire, as also the moisture of the human body, was found to injure the surface of the beads, and some ladies of Paris proposed to Jaquin that he should make hollow beads of glass, and coat them on the inside with his new pearl composition, which he called *Essence d'Orient*, or, Oriental Essence. He acquiesced in the proposal, and thus arose the mode of making artificial Pearls, which has existed but with few alterations to the present day. The attempt succeeded, and the manufacture of bead Pearls became an important branch of business.

The mode of making the bead and coating the inner surface may be thus briefly explained. All vessels made of what is called blown glass, such as drinking glasses, bottles, &c., are formed when the glass is in the state of paste. A hollow tube about three or four feet long is dipped into a pot containing melted glass, a portion of which adheres to the tube. The workman then blows through the tube from the other end, and the glassy paste becomes hollow, in a manner similar to the soap bubbles blown from a tobacco pipe. The blowing is continued until the glass has assumed nearly the form requisite, after which the finishing is performed by hand. But in making glass beads a different process is adopted. A very fine and narrow tube of glass is taken, one end is placed in the flame of a lamp, and the operator blows through it from the other end. When the end of the tube is melted, he blows it out into a globular form, breaks it off, and then proceeds with another. This is done with such rapidity, that an expert workman is said to produce from five to six thousand of these glass globules in a day; but, as some attention is paid to the shape and appearance of these beads, a great number are rejected on account of their ill-shape. In order to resemble nature more closely, these beads are often purposely made with blemishes, and of forms somewhat irregular, such as pear-shaped, oval, or flattened on one side, in imitation of natural Pearls, which are set in such a way as to show only one side.

The beads for the mock Pearls, are made in this manner, the glass of which they are formed having a blueish tinge to assist the imitation of Pearl.

The *Essence d'Orient* (or Pearl Essence, we may perhaps call it,) is then heated; a single drop is taken up on the end of a tube and dexterously blown into the centre of the bead through one of the two holes which always exist in them. The bead is then shaken about either in the hand, or in a machine, until the interior surface is completely covered with the paste. It is then left to dry, and the cavity of the bead is then filled up with white wax, which answers two purposes, namely, to strengthen the bead, and to make its weight more nearly equal to that of real pearl. A hole is then bored through the wax to receive the string.

Thus has this curious branch of business been brought to perfection, a pleasing instance of the manner in which the manufacture of a mere trifle or toy may be made a source of honourable and lucrative emolument. We believe that, up to a recent period, the descendants of M. Jaquin still carried on the manufacture in Paris, while in different towns of France large numbers of these little mock Pearls are being made daily.

The blay, or bleak, is a fish about four inches in length. They are found in great abundance in some rivers, and being exceedingly voracious are taken without much difficulty. The scales of 250 of these fish will not weigh above an ounce, and this again does not afford more than a quarter of an ounce of pearl powder; so that, it is computed, that 16,000 fish are necessary in order to obtain one pound of essence of pearl.

The river Seine, although abounding with this fish, does not furnish an adequate supply. The scales of the fish are therefore sent to Paris from other rivers in large quantities in bottles containing solution of ammonia, which preserves the scales.

We may observe in conclusion, that it is remarkable that the only substance hitherto successfully employed in this imitation, is, like the Pearl itself, derived from fish. And when we observe, (which we

cannot fail to do,) that the interior surface of the shells of many fishes possess those delicate tints which form part of the beauty of a Pearl, we are justified in believing that there is some peculiar fluid existing in a large number of fishes, which, when dried, presents a surface having that beautiful appearance which we term *pearly*.

RUSSIA. No. IX.

FUNERAL CEREMONIES. No. 2.

IN our preceding paper of this series, we described the funeral obsequies of one of the higher classes, not because we were won by the costly array of the lordly funeral, where vanity too often would fain coquet with death, and ostentation bedizen with its tinsel the dark passage to the tomb, but because it afforded an opportunity of remarking those peculiar customs, which among the poor are neglected from sheer poverty.

The writer of this article, not many months ago, witnessed a scene of every-day wretchedness, which he cannot forbear to describe, as a contrast to the description given. In one of the principal thoroughfares of the ancient metropolis of Russia, during the Carnival week, his attention was attracted to a funeral of the humblest aspect. On a rough country cart, drawn by one miserable horse, and driven by a ragged peasant boy, was laid a coffin, formed from the trunk of a tree, rudely fashioned with the axe, and without one single emblem or ornament, except a coarse tattered quilt, half covering it, yet exposing to view the emaciated features of an aged peasant, with hoary hair and long gray beard. No mourners followed, excepting two peasant men, with an old time-bowed woman, who tottered by their side, and who wore the only mark of mourning, a rusty black ribbon bound round the head. The cart was preceded by a solitary priest, whose hurried step and restless air told that he grudged the unprofitable hour. Curiosity, think it not an idle curiosity, prompted an inquiry. The old man had dwelt in a common lodging-house for peasantry, and had gone to his rest the evening before, an evening everywhere in Russia devoted to festivity: his spirit had taken its flight whilst the din of revelry rung around him. He was unknown to those whom Christian charity had induced to follow him to his place of rest. A stranger had closed his eyes, and the chill hand of cautious charity had given him his coffin, and hollowed out his grave. The humble train passed on in silence unnoticed, or noticed but for one brief moment as the passer-by raised his hat, hastily crossed himself, and muttered the valedictory prayer.

Carriage after carriage dashed rapidly past, filled with the youth and beauty of the city, in their gala attire, hastening to the scene of promised enjoyment at the public promenade. Few cast a look towards the bier of the poor peasant,—for what had youth and beauty to do with old age, poverty, and death? The contrast was painfully striking.

Although by an *oukaze*, issued in 1801, the laws of the empire strictly forbid the interment of a foreigner, of different creed, within the limits of consecrated ground, the Greco-Russian Church refuses the mere ceremonial rites of burial to none. If, however, a Protestant, in his last hours, receive the Holy Sacrament, or the extreme unction, as will sometimes happen in remote parts of the country, from the ignorant, though well-meant, zeal of those around, to secure for him a portion of hallowed earth, he is considered as received within the pale of the church, from which, under the

heavy penalty of the law, he can never secede should he chance to recover. All children subsequently born to him are legally subject to its discipline, and must be educated in its faith; and, even posthumous child is placed in the same circumstances. Instances have frequently occurred, nevertheless, where bigoted ignorance has refused Christian rites to the body of a Protestant, though happily the instances are rare.

A distressing case of the kind recently occurred within thirty miles of Moscow. An Englishman of unblemished character, an overseer in the establishment of a Russian manufacturer, died suddenly at the works. His afflicted wife was naturally anxious that her husband's remains should rest besides those of his countrymen in the English burial-ground; but the proprietor, dreading the interference of the police, refused even the loan of a cart to convey it thither. Only a short time established in the country, she knew but little of the language, so little as to be scarcely enabled to make herself understood; every human being stood aloof;—the very peasants, influenced doubtless by fear of the legal responsibility, refused to lend their carts, though promised liberal recompence. The police urged instant burial, the master peremptorily ordered the corpse to be taken from his premises; and the desolate and friendless widow, as a last and inevitable resource, applied to the priest, "to give a little earth for charity." He refused, the deceased not having been of the Greek faith. Entreaties and bribes were alike in vain. Further delay being impossible, a shallow hole was scooped in the corner of an open field, by the Russian workmen whom he had superintended; by their hands he was laid shroudless, in his unblessed grave; his poor daughter, anxious that some semblance of a religious ceremony should mark the consigning of her deceased parent to the earth, attempted to read the sublime funeral service of our church; she sobbed through a few prayers, but overcome by her feelings fainted beneath the effort, and was borne off by her distracted mother. The hole was filled up, the business of the day went on as usual, and the bereaved family sought refuge and consolation among their countrymen in Moscow.

They sought it, and happily they found it too; nor did their wrongs go unredressed. The heart-rending circumstances of the case, were, as a matter of courtesy, laid before some individuals of rank and influence, previously to seeking redress through an official channel. The Metropolitan, a man of distinguished learning, piety, and benevolence, before whom the affair was laid, directed immediate inquiry to be instituted. The result confirming the statement given, the priest and the police received each a severe reprimand; and, had a vindictive spirit, in urging to extremities, prevailed, they would, undoubtedly, have been severely punished. The end, however, was attained; the body exhumed and placed in a coffin, was brought to the English burial-ground, where it was interred with Christian rites.

It is but justice to remark, that in Russia the higher authorities are always ready and energetic in correcting the abuses of subordinates, and in affording protection to foreigners of every nation and of every creed, but there is considerable difficulty in getting access to them. If, however, these scenes are witnessed in a country where toleration is part of the national religion, what may not be expected in those whence it is excluded?

POVERTY.—That man is to be accounted poor, of whatever rank he be, and suffers the pains of poverty, whose expenses exceed his resources; and no man is, properly speaking, poor, but he.—PALEY.

ON EMPLOYMENTS WHICH INJURE THE EYE-SIGHT.

No. III.

FIXED OR FLOATING SPECKS IN THE EYE—CAUSES, REMEDY, PREVENTION—EMPLOYMENTS WHICH INDUCE THE DISEASE—STRAINING THE EYE—SNOW BLINDNESS—EFFECT OF DARKNESS UPON VISION.

We now proceed to notice a few only of the symptoms of *amaurosis*, and, as far as we can, to trace its cause to an injudicious employment of the organ.

(1.) Many of the diseased affections of the eye proceed indirectly from indigestion, a morbid condition of the stomach, the liver, and bowels, resulting from sedentary employment, and the consequent want of that exercise of the body which is so indispensable to the healthy action of all its parts. The fine delicate nervous filament, the retina, possesses a very remarkable property when subjected to pressure, namely, that of becoming luminous, or of conveying to the mind a luminous impression. This may be seen in health and in a dark room, by pressing upon the eye-ball; but its inconvenient, and even alarming instances, occur when the stomach is deranged and headache is present; then the blood-vessels of the head are surcharged, and by pressure on the retina produce appearances of various forms, often a faint phosphorescent haze floating before the eye, varying in shape and colour, and sometimes of various colours at the same time. The morbid sensibility of the retina in these cases is often such, that persons have been able to read even in the darkness of night*; and it is not an uncommon remark with amaurotic patients, that an improvement in vision is observed while inflammation is present, which ceases as the inflammation subsides. These appearances are not so common as the presence of fixed or floating spots, (*muscae*, or flies, as they are called,) which darken a small portion of the field of vision. Their presence is very common to persons of sedentary habit, after about thirty or forty years of age, often earlier, depending, of course, on the average state of health of the individual, and the "wear and tear" to which he has exposed his eyes. The fixed spots sometimes co-exist with the floating, and the latter are constantly varying in size and shape, which depend on causes not well understood. These spots sometimes appear as globules, or rings, or disks; they very commonly resemble particles of soot, transparent vesicles, or minute globules strung together like beads on a thread, or small bulbs with hairs attached to them, or waving lines. With some persons they are seen in the air, or only when the eye is directed to the sky, or a white surface; sometimes they appear only in the flame of a candle or lamp, and others see them only on the ground. Sometimes one eye only is affected, at other times both. They frequently precede or accompany indigestion, or bilious headache, or constipation, while they are often absent when the health is good. These floating spots do not generally interfere with useful vision, and they frequently disappear on looking through spectacles. Such are the general features of the floating musce. Their cause is said by some to depend on a disordered circulation in the vessels of the retina, while others attribute the cause to floating particles in the humours or minute points in the cornea.

The writer of this paper is himself the subject of this disease, and, therefore, feels a more than usual confidence in addressing what, he fears, is a large

* This is stated on the authority of Dr. Jacob.

number of readers similarly affected to himself. If he succeed in removing from the minds of such, any ill-grounded fears and apprehensions concerning the ultimate result of these singular afflictions, one great object of the present article will be achieved; but a still more important object is to warn such of our readers who may be blessed with good and perfect visual organs how they employ them; that is, to establish in their own minds a clear definition of the use of an organ and of its abuse; they will then not have the excuse of ignorance, if, in after years, through any fault or misfortune of their own, they become amaurotic.

There is a case reported by Dr. Travers, in his *Synopsis of the Diseases of the Eye*, so interesting, and so much in point, that we proceed at once to lay it before our readers. It is the case of an intelligent young gentleman, written by himself, and shows clearly the origin, progress, and gradations of this disease. He says,—

About a year and a half ago, the first symptoms appeared which gave me any uneasiness with respect to my sight. For several months I read incessantly, not only throughout the day, but also for five or six hours each night by candle-light, and I now perceived numerous circular motes, which, combining, formed clouds of irregular figures before my eyes. These motes always appear when I look at the sky or any light-coloured object in a strong light; they move with the eyes, retaining for some time the same position, with relation to each other, and to the centre of vision; each consists of a slightly opaque circumference and a central spot, the diameter being, as well as I can judge, about four or five minutes of the circle of vision. Sometimes films appear curved or twisted like hairs, and of the same degree of opacity as the motes. There is a collection of these films always before the right eye, but at such a distance from the centre of vision as not to disturb sight. The number of the motes seems increased by violent exercise, as well as by close reading, or a disordered state of the stomach. Sometimes for a moment a small circular black spot appears near the centre of vision, and sometimes, though not so frequently, one faintly luminous.

The candle next appeared surrounded with a faint halo, which became more vivid as I continued this severe exertion of my sight. When my eyes are unusually weak, or a light is presented to them after I have been some time in darkness, instead of the halo, a globular appearance of a muddy yellow colour, surrounds the flame.

About six months ago, I began to be annoyed by the retina retaining impressions made upon it. After looking at any white or bright metallic object, on turning away my eyes, I distinctly perceive its outline, in a darker shade, on any surface to which I may direct my view; the impression lasting from two or three seconds to half a minute, according to the strength of light, the brightness of the object, and the length of time for which I have viewed it. The flame of a candle leaves its image impressed on the retina frequently for a couple of minutes, the sun for a still longer time, the image in both instances being of a muddy yellow colour.

A kind of penumbra surrounds light-coloured objects in a strong light, and prevents me from accurately distinguishing their outline. When the object is under a sufficiently small angle to be seen entire without moving the eye, it seems double; one image being such as would appear to a healthy eye, the other much fainter; thus is the moon seen, a piece of money, or the gilt letters over shop-windows. These appearances take place indifferently, whether I use either eye or both.

In a few instances, a very severe exertion of my eyes produced the appearance of innumerable black particles dancing before them.

When I read for any considerable time, I have a disagreeable sense of heat in my eyes, with pain in the eyeballs, extending to the lower part of the forehead. I am not constantly subject to headaches, though occasionally afflicted with them, especially if I delay breakfasting for any length of time after rising. My tongue is frequently foul for weeks together, my digestion seems weak, and I seldom enjoy a good appetite.

I ought to observe, that most of the above-mentioned

symptoms seem to have been mitigated since I came to London. Since the application of the blisters, the halo round the flame of the candle has nearly disappeared.

It appears then that the muscae may be removed by attention to a few simple rules of regimen, by resting the eye, and giving it only a fair share of daily employment. If the general health be good, the constant presence of the floating muscae may be regarded as perfectly harmless insects, which are solitary and will not increase; but if the health be in a low, fitful, and uncertain state, the muscae, in common with the insect tribe whence they take their name, will increase and multiply as time goes on, and may in such case be regarded as the prelude to a still more disordered action of the visual organ.

In the first division of employments which induce this disease, we have spoken of such as are sedentary. Persons engaged in them are, like ourselves, students, writers, draughtsmen, &c.; also watch-makers, engravers, and such as are employed in some factories, as needle-workers, and those whose employments require the head to be bent over their work, by which the vessels of the eye are often surcharged with blood, and its powers taxed beyond endurance, by being strained to the perception of minute objects. The very familiar term which we have just employed, "straining the eye," is liable to the serious objection of being unmeaning, of conveying no precise idea to the mind, although the act indicated by this expression is sufficiently intelligible to all. It seems to consist in compressing the eye, by means of the muscles attached to the globe, and by this means it becomes more convex than is natural. It must, however, be admitted, that we are ignorant how it is that the constant employment of the eye, in viewing minute objects, where an unusual quantity of light is not employed, is injurious. It has been inquired, whether in these cases, the retina is in a state of excitement with morbid sensibility, a state approaching to inflammation? or whether it is the very reverse, in a state of impaired sensibility and defective vitality? Now if we may be allowed to hazard a conjecture, we should trace much of the disordered action of the eye from the above causes, to the employment of the double convex lens which is so customary with watch-makers, engravers, &c., whereby the adjusting powers of the eye are ever varying, and this, as we shall see further on, is productive of diseased action in the eye. Again, it must not escape our notice, that persons engaged in minute work, constantly employ artificial means for condensing the light by means of shades, globes filled with water, and double convex lenses, and so directing it to a small part of their work-table, while the rest of the apartment is comparatively obscure. It is notorious that minute work requires a good light, and it is probable, that the causes of disease in these cases are to be found in the second class of employments, which we are just about to consider as well as in the present class. The writer has conversed with a few intelligent watch-makers, who state that they suffer much from headache, &c., while they admit their inability to see clearly objects at great distances. It is also worthy of remark, that the writer has noticed in those persons, that the pupil is unusually small, contracted as it were to a mere speck. It would be worth inquiry, whether a clear view of minute objects is accompanied by the contraction of the pupil; this is a point which our readers can ascertain for themselves. We need not illustrate this division by cases, since the cause is sufficiently obvious, and the reader can supply instances from his own experience.

(2.) The sensibility of the retina is morbidly in-

creased by causes opposite in their nature, while their effect is the same. Travellers inform us of a disease common to the inhabitants of snowy countries, which disease is called snow-blindness; and it is found necessary to protect the eyes by means of a goggle made of wood, leather, &c., with a slit opposite the pupil. Captain Parry and other arctic travellers make frequent mention of this disorder, and speak of covering the face with black crape, which proved an effectual remedy. On the other hand, persons confined in dungeons have acquired the power of distinguishing surrounding objects with the greatest facility in their obscure dwellings, wherein at their first entrance no light whatever could be detected. This power is due, in the latter case, to the peculiar mechanism of the iris, as well as to the increased sensibility of the retina. The iris is composed of two sets of muscular fibres, the one tending like radii towards the centre of the circle, and the other forming a number of concentric circles round the same centre, which centre is the pupil, whose diameter varies by the action of the two sets of muscular fibres which compose the iris. When a luminous object is seen the circular fibres contract, and the radial fibres are relaxed; and thus the size of the pupil is diminished. In dark and obscure situations the radial fibres contract, and the circular are relaxed; and the pupil is thus enlarged, so as to admit a greater quantity of light. The healthy action of the eye very much depends on the perfect operation of the fibres of the iris.

WIGS AND HEAD-DRESSES. No. II.

WIGS were not generally worn in England until many years after they were in common use in Paris. The first noticed in this country was worn by Henry the Eighth's fool, Saxon; and in Shakespeare's time the players resorted to the use of them to produce effect in personating different characters; that great poet makes Hamlet say,—“It offends me to the soul to hear a robustious periwig-pated fellow tear a passion to tatters.”

In the reign of King Charles the First, long hair had become fashionable at the court, and as all were not furnished with flowing locks, it was necessary to supply the deficiencies of nature by art, and this gradually led to the introduction of the periuke, except amongst the members of the bar, who did not assume the wig until about 1670. The periukes were made to assume the appearance of real hair as much as possible, and arranged so as to flow over each shoulder and down the back; the size of these wigs continued gradually increasing through the reigns of Charles the Second and James, until, in the reign of William and Mary they had reached their fullest extent. No. 1 is a representation of the kind of wig then worn by persons of distinction. The size of these wigs was so excessive, that ten heads would not have furnished a quantity of hair equal to the contents of one of them; the curls were made to flow down the back, and hang over the shoulders, half way down the arms.

Louis the Fourteenth's wig was so large, (for the same fashion prevailed in France,) that he was said to rob the heads of his subjects to cover his own; and so great was the demand for hair in England, that in 1700, a young country girl received sixty pounds for her head of hair, and the gray locks of an old woman, after death, sold for fifty pounds; wigs in common were as much as forty pounds each. The clergy had hitherto, with some exceptions, worn their own hair,

but at the beginning of the eighteenth century they began to assume the description of wigs which has



No. 1.

only gone out of use in late years. No. 2 shows the manner in which the hair was worn by a Bishop of London in the reign of Charles the Second, before the clergy had assumed the curled wig of more recent years.



No. 2.



No. 3.

As the wig had reached its largest size during the reign of William, so in the succeeding reigns, those of Anne and George the First, it was more generally worn by all classes, and was made in the greatest variety of forms. About 1720, it was fashionable to tie one-half of it on one side into a club, as in No. 3. A few years after, bag wigs came into fashion; several ludicrous specimens of these are represented in the next engravings; the first two are copied from Hogarth's plates, about 1730, and the third was in



No. 4.

fashion in 1792. The bag was made of black silk to contain the *queue*, and was ornamented with a bow or rosette of the same. This rage for wigs was carried to such an extent, that even children were decked out in them. About 1763, the fashion of wearing wigs was on the decline, and that to such an extent, that the peruke-makers of London presented a petition to the king, in which they complained also of the vast



No. 6.

number of French hairdressers who had introduced themselves into this country.

At the end of the last century the wig began to fall into disuse; many contented themselves with their natural hair, in which they wore powder, and those who still retained this article of dress were satisfied with a wig of less imposing appearance; but still, in many cases, the *queue* was retained, and sometimes it was made of an extravagant length and thickness, tightly bound round with riband so as to resemble a solid mass rather than a bundle of pendant hair. The statue of George the Third, in Cockspur-Street, London, furnishes a good example of this appendage to the wig, but even this sinks into insignificance when compared with the *queue* which was formerly worn by the sailors in the Royal Navy; this reached nearly to the bottom of the back, and must have been very inconvenient to the wearer. These tails were abolished in the navy some years back, and shortly after the filthy powder worn in the hair of the soldier was also abolished, and the hair was cut close.

The wigs of the latter part of George the Third's reign, as we have noticed, assumed a less dignified appearance, as shown in the annexed figures. Since



No. 7.



No. 8.

that time even wigs of this description have fallen into disuse, and the chief work for the peruke-maker now consists in the manufacture of natural scratches, as they are called, for the use of those whose health and comfort require such protection, and of those whose tastes deem them essential to appearances. The real wig is now confined exclusively to the bench of bishops, many of whom, however, do not wear it, and to the members of the legal profession, who cannot dispense with it.

SELF-LOVE but serves the virtuous mind to wake,
As the small pebble stirs the peaceful lake;
The centre moved, a circle straight succeeds,
Another still, and still another spreads;
Friend, parent, neighbour, first it will embrace,
His country next, and next all human race.
Wide and more wide, the o'erflowings of the mind
Take every creature in of every kind.—POPE.

LONDON:

JOHN WILLIAM PARKER, WEST STRAND.
PUBLISHED IN WEEKLY NUMBERS, PRICE ONE PENNY, AND IN MONTHLY PARTS,
PRICE SIXPENCE.
Sold by all Booksellers and News-vendors in the Kingdom.